

A Model for the Design of a Disaster Management Web Site

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The Center of Excellence in Disaster Management and Humanitarian Assistance in Honolulu, Hawaii undertook the creation of an information system using World Wide Web (WWW) architecture to support its primary mission: education, training, and research in the fields of disaster management and disaster medicine. Because the web site has the potential to address a range of "just in time" information needs which are at present time unmet, we investigated how to incorporate feedback from the experts in the field. We wanted to establish whether user perspectives and interests could be used to shape the form and functions of the website.

We selected the 1995 Humanitarian Support Operations (HSO) Conference in Honolulu Hawaii as the initial study locale. The 1995 HSO Conference brought together an international group of over 160 disaster management/humanitarian assistance personnel from 23 nations, primarily in the Asia Pacific region. Conducting a study in this environment insured that persons selected for participation would possess an appropriate knowledge base and verifiable professional interests.

While entirely accomplished in their respective professions, many of these professionals hadn't used the Internet. To address the lack of exposure to WWW technology within the study group, a demonstration web site that displayed information and offered links to data of known interest to disaster management professionals was developed and presented at the conference.

We have utilized four different methods to elicit participants' and users' responses: 1) personal interviews and discussions; 2) surveys of Internet and online computer familiarity and use; 3) concept mapping, a planning and program evaluation method which utilizes group brainstorming in combination with sorting and rating tasks; and 4) continued electronic feedback and evaluation from users.

Personal interviews allowed informal contact with experts in the field and provided creative and open-ended responses, and the opportunity to explore in detail elements revealed in the brainstorming.

surveys provided information on basic levels of experience with online information systems.

A brainstorming task involving twelve participants yielded 94 activity statements in response to the question "What would you find yourself doing if you were connected to a Disaster Management Information Network?" The statements were sorted and rated on a personal importance scale by 25 participants. Multidimensional scaling yielded a map of statements organized in terms of their perceived similarity. Cluster analysis of the scaled statements yielded clusters of higher order concepts; rating indicated the importance of each cluster.

Given this collection of user feedback, WWW site design would then consist of the creation of an information system that: 1) (from the interviews) takes into consideration personal and/or cultural characteristics that might complicate or enhance web site use; 2) (from the surveys) is alert to relative proportions of novice and seasoned Internet users; 3) (from concept mapping) executes the participants' stated activities; and 4) (from the electronic feedback and evaluation) focuses on providing information that will be useful. The order of implementation of web site features would be a function of the individual or mean/median cluster ratings of importance and electronic feedback results.

Input from potential and actual users of the web site have pushed the web site design approach into areas of technical growth well beyond HTML composition. Our web site plans now include: the design creation of Oracle7 databases; the utilization of Adobe PDF document format for electronic publishing; investigating Java and Java-like programming languages; and the development and use of disaster simulation software. Future refinements to our design efforts will involve the continued analysis and evolution of the electronic feedback and evaluation system, collecting additional responses to the existing action statements, conducting additional brainstorming sessions, and comparing sets of action statements as a function of profession and culture.